WHAT IS CLAIMED IS:

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1. A data reproduction apparatus comprising:

a Viterbi detection unit having a plurality of detectors each providing a first partial response signal with a first constraint length from a first sequence of samples derived from

10 a first readout signal; and

a connection unit selecting one of connection and disconnection of the plurality of detectors in the Viterbi detection unit in response to a timing signal,

wherein, when the connection of the plurality of detectors

15 is selected by the connection unit, the Viterbi detection unit provides a second partial response signal with a second constraint length from a second sequence of samples derived from a second readout signal, the second constraint length being different from the first constraint length.

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2. The data reproduction apparatus of claim 1, wherein the

25 second constraint length is larger than the first constraint length.

30 3. The data reproduction apparatus of claim 1, further comprising:

a first register storing a first expected value corresponding to the first partial response signal with the first constraint length; and

35 a second register storing a second expected value corresponding to the second partial response signal with the second constraint length.

4. The data reproduction apparatus of claim 3, wherein one of the first expected value output from the first register and the second expected value output from the second register is selectively set to the Viterbi detection unit in accordance with

5   the timing signal.

10   5. The data reproduction apparatus of claim 1, wherein the plurality of detectors include branch metric computation units, add-compare-select units, path metric memories, and pass memories, and wherein the connection unit selects one of connection and disconnection of each of the branch metric

15   computation units, the add-compare-select units, the path metric memories and the pass memories in response to the timing signal.

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6. The data reproduction apparatus of claim 5, wherein, when the connection of the plurality of detectors is selected, the connection unit changes internal connections of the pass memories from internal connections of the pass memories when

25   the disconnection of the plurality of detectors is selected.

30   7. The data reproduction apparatus of claim 5, wherein, when the connection of the plurality of detectors is selected, the connection unit changes the individual samples that are supplied to the plurality of detectors, from the individual samples supplied to the plurality of detectors when the disconnection of

35   the plurality of detectors is selected.

8. The data reproduction apparatus of claim 1, further comprising a control unit that controls the connection unit by supplying the timing signal to the connection unit.

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9. A data reproduction method comprising the steps of:

providing a Viterbi detection unit having a plurality of
10   detectors each providing a first partial response signal with a first constraint length from a first sequence of samples derived from a first readout signal; and

selecting one of connection and disconnection of the plurality of detectors in the Viterbi detection unit in response to
15   a timing signal, wherein, when the connection of the plurality of detectors is selected, the Viterbi detection unit provides a second partial response signal with a second constraint length from a second sequence of samples derived from a second readout signal, the second constraint length being different from
20   the first constraint length.

25   10. The data reproduction method of claim 9, wherein the plurality of detectors include branch metric computation units, add-compare-select units, path metric memories, and pass memories, and wherein, in said selecting step, one of connection and disconnection of each of the branch metric computation
30   units, the add-compare-select units, the path metric memories and the pass memories is selected in response to the timing signal.

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